

Ignitron

WATER-COOLED, STEEL-JACKETED, MERCURY-POOL-CATHODE TYPE

For Power-Rectifier and Resistance-
Welding-Control Applications

GENERAL DATA

Electrical:

Cathode Excitation.Cyclic
Cathode-Spot StartingBy Ignitor

Minimum Requirements for Cathode Excitation:

Peak ignitor voltage required to fire . . . 150 volts

Peak ignitor current required to fire . . . 40 amp

Starting time at required voltage
or current. 100 μ sec

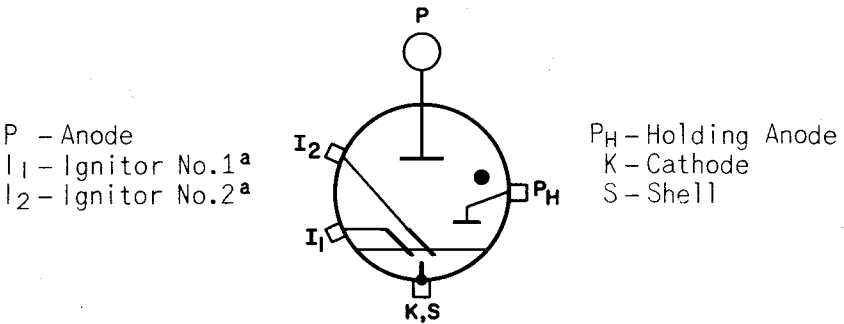
Tube Voltage Drop:

At peak anode amperes = 600 16.2 ± 0.5 volts

Mechanical:

Operating Position.Vertical, flexible lead up
Length, Bottom of Cathode Terminal toCenter of Hole in Anode Terminal. $28-1/8" \pm 3/4"$ Maximum Radius (Including water connections). $4-9/16"$

Weight (Approx.). 25 lbs

Terminal Diagram (See *Dimensional Outline*):

Thermal:

Cooling:

Type. Water

Minimum inlet-water temperature:

For substantially constant loads. 6 °C

For widely fluctuating loads. 25 °C

Maximum outlet-water temperature for
peak inverse anode volts =

900 60 °C

2100. 45 °C

Minimum water flow:

At maximum-rated continuous average

anode current 3 gpm

At no load. 1 gpm

Maximum water-temperature rise. 4.5 °C

Maximum pressure drop at water flow (gpm) = 3 . . . 6 psi

← Indicates a change.



POWER-RECTIFIER SERVICE

Maximum Ratings, Absolute-Maximum Values:

*For zero phase-control angle and
frequencies from 25 to 60 cps*

PEAK ANODE VOLTAGE:

Forward.	900 max.	2100 max.	volts
Inverse.	900 max.	2100 max.	volts

ANODE CURRENT:

Peak	1800 max.	1200 max.	amp
Average:			
Continuous	200 max.	150 max.	amp
Averaged over any interval of 1 minute.	400 max.	300 max.	amp
Fault, for duration of 0.15 second maximum.	12000 max.	9000 max.	amp

RESISTANCE-WELDING-CONTROL SERVICE^b

Two Tubes in Inverse-Parallel Circuit

Maximum Ratings, Absolute-Maximum Values:

For frequencies from 25 to 60 cps

	Column 1 ^c	Column 2 ^c	
SUPPLY VOLTAGE (RMS).	2400 max.	2400 max.	volts
DEMAND POWER (During conduction ^d).	1105 max.	2400 max.	kva
ANODE CURRENT (Per tube):			
Average (Averaged over any interval of 1.66 seconds maximum	207 max.	135 max.	amp
Fault	6000 max.	6000 max.	amp

IGNITORS — Two^a

Maximum Ratings, Absolute-Maximum Values:

PEAK IGNITOR VOLTAGE:

Positive.	Equal to anode	volts
Negative.	5 max.	volts

IGNITOR CURRENT:

Peak.	100 max.	amp
Average (Averaged over any interval of 10 seconds maximum	2 max.	amp
RMS	15 max.	amp

HOLDING ANODE

Maximum Ratings, Absolute-Maximum Values:

PEAK HOLDING-ANODE VOLTAGE:

Forward	160 max.	volts
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→ Indicates a change.

Inverse:

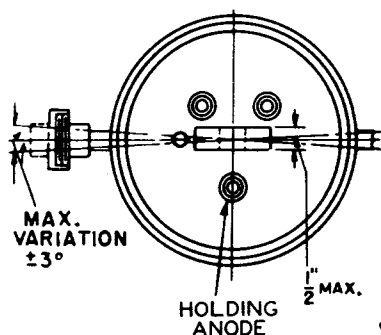
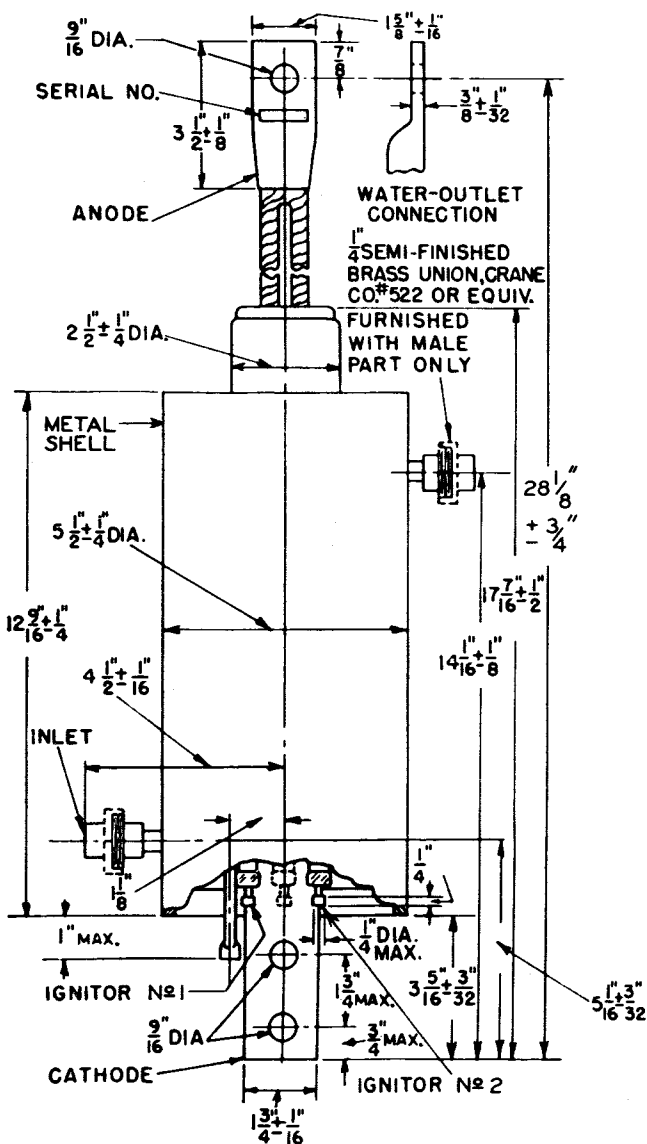
Main anode conducting.	25 max.	volts
Main anode not conducting.	160 max.	volts

HOLDING-ANODE CURRENT:

Peak	20 max.	amp
Average (Averaged over any interval of 10 seconds maximum)	5 max.	amp
RMS.	10 max.	amp

- ^a To insure longer life, this type is provided with two ignitors, only one which is used at a time.
- ^b RMS voltage, current, and demand kva are on the basis of full-cycle conduction (no phase delay) regardless of whether or not phase control is used.
- ^c *Column 1* represents operation at maximum average anode current; *Column 2* represents operation at maximum demand current.
- ^d With the use of log-log paper, straight-line interpolation between tabulated points may be used for other detailed ratings of demand kva vs. average anode current.





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